Descriptive analysis was done, bivariable and multivariable analysis using appropriated test were performed.
Results: 80 women with knee OA were studied, mean height 1.52 m (1.41-1.7 m). Mean disease duration from diagnosis was 3 years (0.1-12). 13 patients (16.3%) had severe OA. Performing ROC curves, patients with height below 1.52 m and over 61 years of age had an increased risk to present severe OA versus low/moderate grade patients. Mean height for severe knee OA patients was 1.48±0.04 m vs 1.53±0.06 m for those in low/moderate knee OA (p = 0.01). By means of a binary logistic regression, only height <1.52 m had an OR 6.7 (IC 95% 1.3-32.9, p = 0.008) for severe OA, age (p = 0.18), body mass index (p=0.87), and mean disease duration from diagnosis (p = 0.67). Ultrasonographic evaluation showed that patients with severe OA had a greater proportion of synovial hypertrophy, joint swelling and the presence of positive power Doppler signal (p <0.05).
Conclusions: Female patients with short stature (1.52 m or less) are at high risk for the development of severe knee OA. Short stature should be weighted as factor contributing to the development of severe knee OA in patients from different ethnic backgrounds. US evaluation represents a useful tool for the evaluation of soft tissues abnormalities associated with advanced knee OA.

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PAIN, PHYSICAL FUNCTION, AND STIFFNESS IN KNEE OSTEOARTHRITIS: ASSOCIATIONS WITH INDIVIDUAL AND COMMUNITY SOCIOECONOMIC STATUS FACTORS

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Purpose: Several studies have evaluated individual socioeconomic (SES) factors associated with pain and disability in knee osteoarthritis (OA), but no studies have examined community SES factors associated with these outcomes. Our study examines associations between education, occupation, and community poverty with pain, physical function, and stiffness in people with knee OA, while controlling for pain in another lower extremity, the hip.
Methods: A cross-sectional analysis was conducted on 2933 individuals (65% White and 35% African American [AA]) residing in 67 of the 68 Census block groups of Johnston County, NC. Education (<high school (HS) degree or ≥HS), occupation (physically demanding or not) and Census block group poverty rate (<12%, 12-25%, >25%) were SES measures. Covariates included age, gender, race, body mass index (BMI), hip pain, and an occupational activity scale (reporting frequency of squatting, standing, lifting, and walking). Three outcomes were investigated: pain, physical function, and stiffness measured by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Analyses were run separately for people with radiographic (rOA) (defined as Kellgren-Lawrence grade ≥2 in one or both knees), and symptomatic OA (sympOA) (rOA and pain, aching or stiffness on most days in the same knee joint). Multiple regression models were used to determine associations of each outcome and the three main SES variables, adjusting for covariates.
Results: 31.8% of the sample had knee rOA and 21.3% sympOA, all of whom had rOA. There was no evidence of effect modification for race with the SES variables. In unadjusted models, lower education level, physically demanding occupation, and higher block group poverty rate were all significantly (p<0.05) associated with WOMAC pain, physical function, and stiffness in individuals with rOA. In sympOA, occupation and poverty were significantly (p<0.05) associated with pain; education, occupation and poverty with function; and occupation with stiffness. In individuals with rOA, when the three SES variables were analyzed individually for associations with WOMAC outcomes adjusted for covariates, education and occupation were significantly (p<0.01) associated with pain, [βs, 95% CIs respectively, 0.89 (0.21,1.74), 1.06 (0.34,1.78)]. Education, occupation, and community poverty were significantly (p<0.01) associated with function [βs, 95% CIs, 4.35 (1.88, 6.83), 3.6, (1.15, 6.05), 3.17 (0.47,5.87)]. Education was significantly associated with stiffness [β, 95% CI 0.37, (0.05, 0.69)]. In individuals with sympOA, occupation and poverty were significantly associated (p<0.01) with pain [βs, 95% CIs, 1.18 (0.27, 2.08), 1.19 (0.2,2.18)]. Education, occupation, and poverty were associated with function [βs, 95% CIs, 3.59 (0.56, 6.62), 3.97 (0.91, 7.03), 4.4 (1.03,7.76)]. No SES variables were associated with stiffness. In models that included all three SES variables simultaneously with covariate adjustments, occupation was associated independently (p<0.05) with pain in rOA [β 95% CI, 0.87 (0.11,1.62)] and occupation and poverty with pain in sympOA [βs 95% CIs,1.16 (0.21, 2.11), -1.17 (-2.12,-0.22)]. Education and poverty were associated independently (p<0.05) with function [βs=3.44, 95% CIs (0.82, 6.05), -3.15 (-5.72,-0.58)] in individuals with rOA. No SES variables were associated with stiffness. Throughout the analyses, hip pain and obesity (BMI>30) were the dominant significant covariates contributing to WOMAC scores.
Conclusions: Our study confirms that the individual level SES measures are associated with pain, function and stiffness in individuals with knee OA after adjusting for known predictors such as BMI, gender and hip pain. Community poverty was also shown to be independently associated with pain and function after adjusting for individual SES and other covariates in knee OA.

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DETERMINANTS OF CLINICAL PROGRESSION OF LOWER EXTREMITY OSTEOARTHRITIS

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Purpose: Sometime Osteoarthritis (OA) can affect knees and hips at the same time. The OA of the lower limbs accounts for problems in performing lower extremities tasks such as walking and stair climbing. Since OA is a progressive disease with a heterogeneous disease outcome, identifying determinants which are associated with worse outcome is important for patient information concerning their disease and on prognosis. Moreover, possible treatment can be aimed at modifying these determinants. We investigated here the determinants of OA progression of lower extremity.
Methods: This study was part of the Genetic Arthrosis and Progression cohort. From this cohort, patients with osteoarthritis in either knee or hip or both knee and hip were followed for 6 years. The following clinical determinants were investigated: age, sex, body mass index (BMI), self-reported pain and function experienced at knees and hips together at baseline using Western Ontario and MacMaster (WOMAC) scores, WOMAC pain and function worsening after 1 year, presence of pain on physical examination, total range of motion (tROM, the sum of flexion and extension of the knee and endorotation of the hip). Also investigated were the radiological determinants: osteophytes and joint space narrowing (JSN) scores, which are determined using Osteoarthritis Research Society International- atlas. Clinical progression was defined as 1) total joint replacement performed during the follow-up, 2) change in self-reported pain or function (WOMAC scores) above the minimum perceptible clinical improvement, which were 9.7 and 9.3, respectively. Relative risks (RR) for clinical and radiological determinants of progression were calculated together with 95% confidence interval (95% CI) and adjusted for age, sex and BMI.
Results: Of 168 patients investigated, 135 (80.3%, mean age: 61 years, 82% female) completed the follow-up. Clinical progression was present in 58% of patients; 36% received joint replacement and 22% reported worsening in self-reported pain or function. Pain on physical examination (RR 2.0, 95%CI 1.2 to 3.0) and limited total range of motion (tROM) at baseline (RR 2.3, 95%CI 1.4 to 3.2) as well as worsening of self-reported pain (RR 2.7, 95%CI 1.2 to 4.5) and function (RR 3.5, 95%CI 1.6 to 5.5) over 1 year were associated with clinical progression. Other clinical determinants were not significantly associated. Osteophytes scores (RR 2.3, 95%CI 1.2 to 3.6) and JSN scores (RR 3.9, 95%CI 2.0 to 5.1) at baseline were also associated with clinical progression.
Conclusions: We find that objective measures of pain and function at baseline are associated with clinical progression of lower limbs OA. These results can be used for patient information concerning the prognosis of OA at the long-term. Additional information on detrimental prognosis can be given when self-reported (WOMAC) pain and function were deteriorated after 1 year. Whether improvement of pain or function in one year would lead to better prognosis should be tested in trials on pain medication or physical therapy.